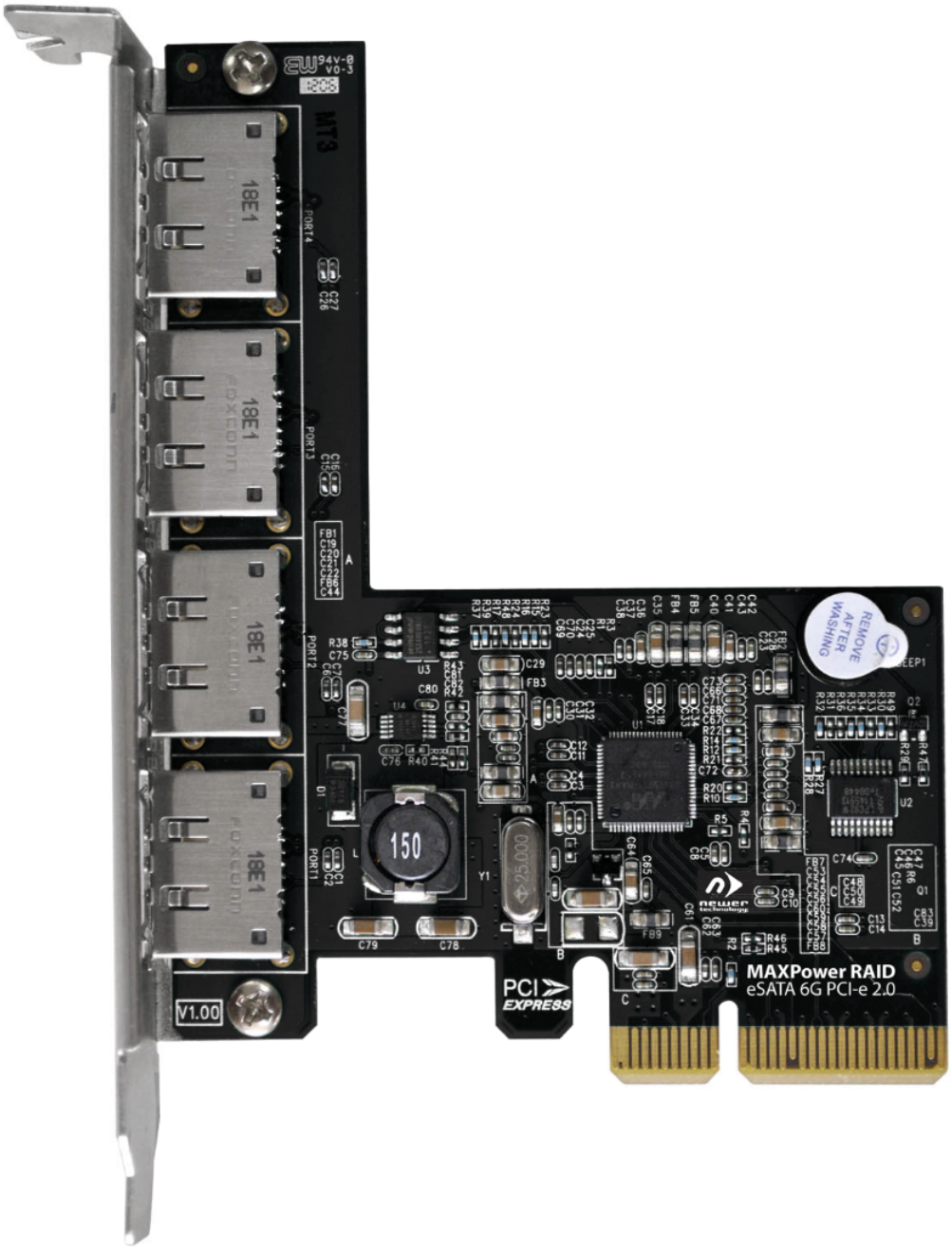
newertechnology inc

MAXPower™ RAID

eSATA 6G-4e PCIe 2.0 Controller Card



User Manual

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Package Contents

- NewerTech MAXPower RAID eSATA 6G-4e PCIe 2.0 Controller Card
- User Manual (on disc) & Quick Start Guide
- Driver & Software Installation Disc

Images and descriptions may vary slightly between this manual and the unit shipped. Please visit the product webpage for the most recent specifications.

Part 1: Introduction

MAXPower RAID eSATA 6G-4e PCIe 2.0 Card

Utilizing the latest eSATA 6Gb/s technology, the MAXPower RAID eSATA 6G-4e card is the ideal choice for high-speed, efficient, low-cost, RAID capable connectivity for the Mac or PC.

MAXPower RAID eSATA 6G-4e Features:

- PCIe 2.0 x4 (2GB/s bandwidth)
    - Compatible with PCIe 1.0 (1GB/s bandwidth)
- Four eSATA 6Gb/s ports (600MB/s per port)
- eSATA Hot Plug Support
- Port Multiplier support for up to 20 drives
- RAID level 0, 1, 5, 10, SPAN and individual drive support
- Convenient browser-based management
- SHI (Storage Health Inspector) for the monitoring and reporting of drive health
- Compatible with SATA based hard disk drives and solid state drives
- 3 year warranty

What is eSATA 6Gb/s?

eSATA stands for External Serial Advanced Technology Attachment. eSATA 6Gb/s (revision 3.0) is the latest SATA standard at the time of this printing, and provides data transfer rates up to 6Gb/s (600MB/s) for external storage devices.

What is RAID?

RAID stands for Redundant Array of Independent Drives. Put simply, this means taking multiple matching drives and arranging them together to achieve large storage space, speed, data protection, or any combination of the three. The MAXPower RAID eSATA 6G-4e PCIe 2.0 Controller Card supports RAID 0, 1, 5, and 10 levels as well as supporting JBOD (SPAN and individual drive modes).

RAID 0 "Stripe"

Speed & Large Storage

Speed: Data is alternated across two or more drives to gain speed by essentially distributing the workload.
Protection: No built-in protection.
Capacity: Usable space is the combined capacity of all the drives.

RAID 1 "Mirror"

Protected Storage

Speed: No speed benefits gained.
Protection: One drive can go down and all data will still be accessible.
Capacity: One drive worth of usable space out of the two total drives used.

RAID 10 "Mirror + Stripe"

Fast, Large, & Protected Storage

Speed: Combines a pair of RAID 1 "Mirrored" sets by using RAID 0 "Striping" to gain speed.
Protection: There are two RAID 1 "Mirrored" sets used in order to to tolerate 1 or 2 drives failing, depending on where the drives are positioned in the array.
Capacity: Usable space is half of the combined capacity of all the drives used.

RAID 5 "Stripe & Protection"

Optimized Speed, Capacity, & Protection

Speed: Data is striped like in a RAID 0, so significant speed gains are seen.
Protection: Utilizes mathematical parity to achieve data protection while taking up a minimum of space.
Capacity: All but one drive worth of capacity is usable. In a four drive RAID 5 array, there is three drives worth of usable space.

Part 2: System Requirements & Installation

System Requirements

Mac®

Hardware: Intel-based Mac with available PCIe 2.0 or 1.0 slot* or Thunderbolt equipped Mac utilizing a Thunderbolt PCIe expansion unit.

Operating System: Mac OS X 10.6 and later

PC

Hardware: Any computer with available PCIe 2.0 or 1.0 slot*

Operating System: Windows® Vista/Server 2008 and later

**PCIe x4, x8, or x16 slot is required*

Hardware Installation

Before Installing the MAXPower RAID eSATA 6G-4e card...

- *Make sure computer is turned off and unplugged from its power source*
- *Take appropriate electrostatic discharge precautions:*

Your computer is a static-sensitive device. It is susceptible to invisible damage if not protected during installation.

We recommend proper grounding by using a grounding strap. Make sure to work in a clean and static-free area, and avoid wearing clothing that retains static charges.

For more information, please visit:
http://www.newertech.com/static

Step 1 Open the computer systems chassis and locate an unused PCIe 2.0 or 1.0 slot (x4, x8, or x16).

Step 2 Remove the PCI slot cover.

Step 3 Gently insert the MAXPower card into the PCIe slot and secure the bracket to the computer chassis.

Step 4 After installing the MAXPower card attach any eSATA storage devices to the card and start your computer.

Step 5 Once you have installed the MAXPower card into your computer, start your computer and insert the Driver & Software Installation Disc to install the necessary drivers for your computer operating system.

Driver & Software Installation

Your NewerTech MAXPower RAID eSATA 6G-4e Card comes with a disc containing the drivers and software for Mac and Windows. For the latest drivers and installation software visit: http://www.newertech.com/support.

Mac OS X

Once you have installed the NewerTech MAXPower RAID eSATA 6G-4e Card and booted your Mac, follow these instructions to install the drivers and the NewerTech Web Manager software:

1. Insert the NewerTech NewerTech MAXPower RAID eSATA 6G-4e Card Install Disc into your Mac and navigate to the "Mac OS X" folder.
2. Double-click on the "MAXPower_RAID_4eSATA_Mac_XXXXXX.dmg" file to mount the disc image containing the Mac OS X software and drivers.
3. Double-click on the installer package labled "MAXPower_RAID_4eSATA" to start the installation process.
4. Follow the on-screen steps to complete the installation process. After install has completed, you will be prompted to restart your computer. You will need to restart in order to use the NewerTech MAXPower RAID eSATA 6G-4e Card.

Windows 8/7/Vista/Server 2008

After starting your computer with the NewerTech MAXPower RAID eSATA 6G-4e Card installed, Windows will display the "New Hardware Found" notification in the taskbar, which will state that the "Device driver software was not successfully installed".

To install the drivers:

1. **Windows 7/Vista/Server 2008:** Click on the Windows Start menu and right click on "Computer" and select "Properties" which will launch the System screen.
   Windows 8: Enter desktop mode, click on Library in the Taskbar to open a window. Right click on "My Computer" in the sidebar and select "Manage."
2. Click on "Device Manager" on the left side of the window to launch Device Manager.
3. Under the "Other Devices" category, the MAXPower RAID Card will appear with a yellow warning symbol.
4. Right click on the MAXPower RAID Card and select "Update Driver Software..." to start the driver installation.
5. Click on "Browse my computer for driver software"
6. Browse to the NewerTech MAXPower RAID eSATA 6G-4e Card Install Disc.
7. From within the install disc, browse to "...\Windows\Drivers\" and click "OK".
8. Click "Next"
9. When asked: "Would you like to install this driver software?" select "Install".
10. Reboot your computer when prompted to complete the installation of the NewerTech MAXPower eSATA 6G RAID Card.

To install the NewerTech Web Manager Software:

1. From the NewerTech MAXPower RAID eSATA 6G-4e Card Install Disc, browse to "...\Windows\WebGUI" and double-click on "Setup.exe" to launch the installer.
2. Follow the installer to complete the installation.
3. Restart your computer.

Booting to the MAXPower RAID eSATA 6G-4e Card

While most users do not need to boot from drives connected to the MAXPower RAID eSATA card, it is possible to do so using the steps provided in this section. You do not need to do these steps if you are not booting to drives connected to the MAXPower RAID eSATA card.

Proceed with care as the process can be involved depending on your computer type.

PC BIOS Booting

The NewerTech MAXPower RAID eSATA 6G-4e Card by default has boot support for PC BIOS. During startup, press "Ctrl + M" when the prompt appears on screen to access the card's BIOS setup. From within the BIOS Setup, you can create a drive set/array. After creating the drive set/array, you can install to it using your Windows installer or you can use third party cloning software to clone an existing installation to the connected drive set.

Mac OS X Booting

The NewerTech MAXPower RAID eSATA 6G-4e Card by default has boot support for PC BIOS, but not Mac EFI. The Mac EFI support file can be found on the included driver and software disc and can also be downloaded from www.newertech.com/support. It is strongly recommended to check the website to see if there is a more recent EFI file than what is found on the driver and software disc.

READ BEFORE PROCEEDING!

Any Mac OS X installation on the MAXPower RAID card will not have the Mac OS X recovery partition under Lion (Mac OS X 10.7) and Mountain Lion (Mac OS X 10.8).

Before proceeding, it is strongly recommended to have a drive permanently on hand that contains Mac OS X Recovery in case reinstallation of Mac OS X becomes necessary. You can use Apple's Recovery Disk Assistant (http://support.apple.com/kb/DL1433) to install OS X Recovery to an empty drive. In order to use this tool, you must have an existing Mac OS X Recovery partition.

IMPORTANT NOTES:

- **It is strongly recommended to check the website to see if there is a more recent EFI file than what is found on the driver and software disc.**
- **In order for a Mac OS X installation to be bootable from the MAXPower RAID card, it must have the drivers installed as well as the EFI support file uploaded to the card.**
- **The clone/restore process is different for the various Mac OS X versions using Disk Utility. Third party cloning software can be used to greatly simplify the process on Mac OS X 10.7 and 10.8.**
  - **Mac OS X 10.6 has the ability to do a file-level clone/restore using Disk Utility while you are booted to the source.**
  - **Mac OS X 10.7 & 10.8 requires Disk Utility to do a block-level clone/restore, which means that the source must be unmounted for the clone/restore to occur. In this process, you must boot from another Mac OS X installation that has the MAXPower card drivers installed in order to use Disk Utility to clone/restore. Using third party cloning software that can do file-level clones can simplify the process, as you can be booted to the source volume as the clone/restore is being conducted.**

SUPPORTED MACS:

- **Mac Pro Models**
  - **MacPro3,1 (Early 2008)**
  - **MacPro4,1 (Early 2009)**
  - **MacPro5,1 (Mid 2010 & Mid 2012)**
- **Any Thunderbolt equipped Mac via Thunderbolt PCIe expansion unit**

Fresh Installation of Mac OS X

If you wish to do a fresh install of Mac OS X on the drives connected to the MAXPower RAID card, use the following steps. This process involves temporarily installing Mac OS X to an intermediary drive in order to then install the MAXPower card drivers. After drivers have been installed, a clone/restore to the destination drives connected to the card is done.

Items needed:

- An empty intermediary drive or partition at least 12GB in capacity. The drive must not be connected to the MAXPower card and must support booting natively on your Mac. An internal drive/partition will work, as will an external FireWire or USB drive. The drive/partition should be formatted for Mac OS Extended (Journaled), but should not contain any data.
- Mac OS X installation software (in application, disc, or drive form).
- Cloning software (Mac OS X's built in Disk Utility or third party software).
- Latest MAXPower RAID eSATA 6G-4e driver, software, and EFI support file.

1. Using your Mac OS X installation software, install to the intermediary drive.
2. After installation of Mac OS X to the intermediary drive has completed, boot into that new installation.
3. Install the MAXPower RAID eSATA 6G-4e driver and software, then restart (making sure you restart into the same installation).
4. Access the MAXPower RAID eSATA 6G-4e card's NewerTech Web Manager interface as described in "***Part 3: Management***" of this manual.
5. Upload the EFI support file to the card by using the "Update BIOS" section found in the "Device Management" section of the Web Manager. To get to the "Device Management" section, navigate to the "Manage" menu and select "Devices." Click on the "Choose File" button and browse to the EFI support file. After selecting the EFI support file, click on the "Submit" button.
6. Restart your computer.
7. If the destination drives connected to the MAXPower RAID card have not already been set up, access the NewerTech Web Manager to configure them, following the the process described in the "***Part 3: Management***" section of this manual. You can use a single drive connected to the card or create a RAID using multiple drives. After creating the drive set, format the set using Disk Utility.
8. The new Mac OS X installation (with the MAXPower RAID card drivers installed) can now be cloned/restored from the intermediary drive over to the new drive set. To do this, you can use Apple's Disk Utility program or a third party cloning software. See the important note regarding cloning/restoring at the beginning of this "Mac OS X Booting" section.
9. After the clone/restore has been completed, you can now boot to the installation connected through the MAXPower RAID card. You may need to hold down the "Option" key during startup and/or select the installation in Mac OS X's Startup Disk preference pane located in System Preferences.

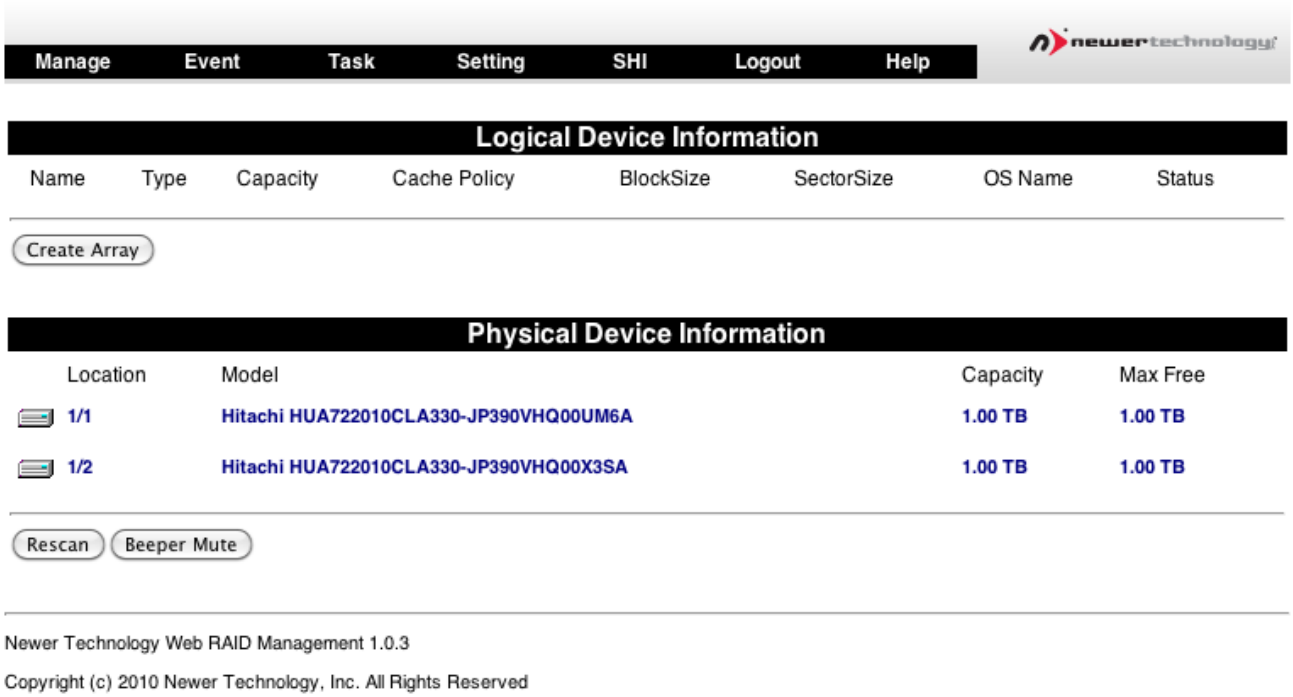
Existing Installation of Mac OS X

If you wish to transfer an existing installation of Mac OS X to the drives connected to the MAXPower RAID card, follow steps 5 through 9 in the "Fresh Installation of Mac OS X" section. Using third party cloning software can simplify this process on Mac OS X 10.7 & 10.8.

Part 3: Management

NewerTech Web Manager

The NewerTech Web Manager is an easy-to-use utility to set up RAID arrays, manage connected drives, view storage health status, and view information about your connected storage.



Access

The NewerTech Web Manager can be accessed from any web browser* on the computer being used by entering the following address into the address bar:

http://localhost:7402/

When prompted for a username and password, enter the following:

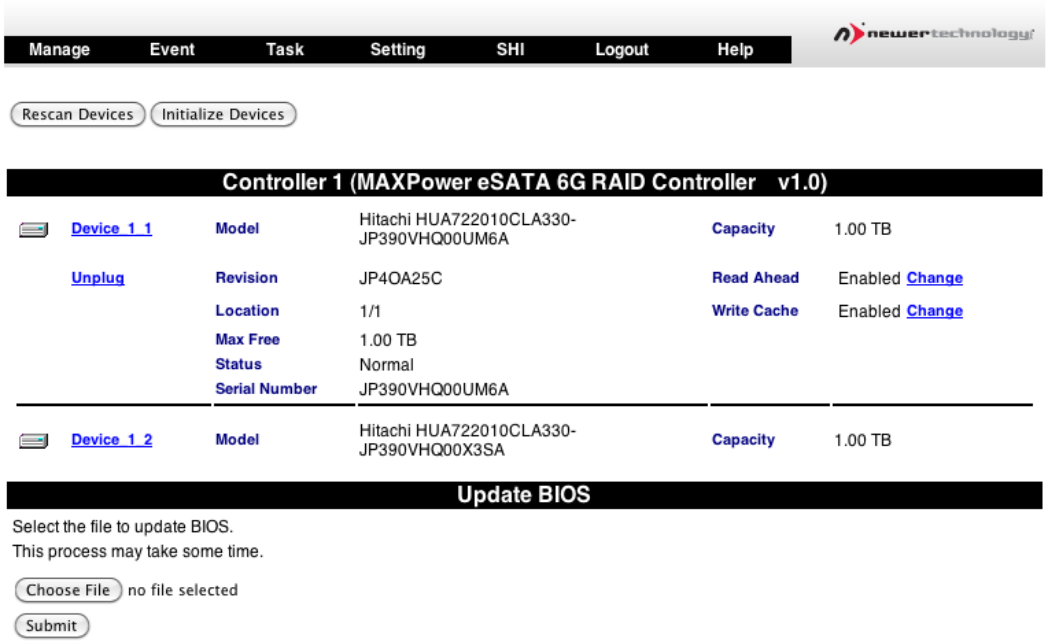
Username: admin
Password: admin

The username and password can be changed at any time from within the Web Manager.

**Browser must support XML (e.g. Safari, Firefox, Chrome, Internet Explorer, etc.)*

Device Management

Click on the "**Manage**" menu item and select "**Device**" to enter the Device Management screen.



Changing Device Settings

Depending on the features of the drives you are using, you can adjust settings such as Read Ahead, Write Cache, TCQ, and NCQ.

Initializing Devices

Initializing a drive writes necessary RAID configuration information to the drive to prepare it for inclusion in a RAID array and/or spare pool.

!! IMPORTANT !!

Initializing a drive will destroy existing data!

Initialize drives before beginning the RAID array creation process or hot spare assignment process. If drives have previously been used in a RAID array on the card, they may not need to be initialized again and will appear as available drives in the RAID array creation screen.

To initialize drives, click on the "Initialize Devices" button to access the initialization screen. Using the checkbox next to each uninitialized drive, select the drives you wish to initialize and then click the "Initialize" button.

Rescanning for Devices

If a drive is connected to the controller while in the Device Management screen, click "***Rescan Devices***" to have the Web Manager recognize the connected drive.

Unplugging Devices

To properly disconnect a drive from the controller card, click on the drive to be removed and then click "***Unplug***" to allow the drive to be physically disconnected from the controller card.

If a drive is included in a RAID array, the entire RAID array will need to be unplugged from the Array Management screen before physically disconnecting the array or drive within the array. See the "***Unplugging an Array***" on page 12 for more information.

Array Management

The Array Management screen acts as the Web Manager's home screen, but to access it from any other screen click on the "***Manage***" menu item and select "***Array***" to enter the Array Management screen.

Creating a RAID Array

To create a RAID array, click on the "***Create Array***" button in the "***Logical Device Information***" section. Once the "***Create Array***" screen has loaded, configure the following settings to create the RAID array:

1) Array Type

Select the RAID level you want to use. *See page 3 of the manual for RAID type explanations*.

Select "JBOD (Volume)" if you want to use a single drive or want to do a concatenation/spanning of drives.

2) Array Name

Name the array for identification within the Web Manager. The volume name will be created after you format the created array.

3) Initialization Method

Quick Initialization

Skips the full build/initialization of the array and allows for a volume to be created. This is not usually recommended and is only acceptable for use with new drives that have not had data previously written to them.

Foreground

The RAID will fully initialize before a volume can be created and the array utilized. This may take hours.

Background

Allows a volume to be created and utilized while the RAID initialization is conducted in the background.

4) Cache Policy

Write Back

Writes to the array are cached, which will result in higher performance but data loss may occur in the event of a power failure.

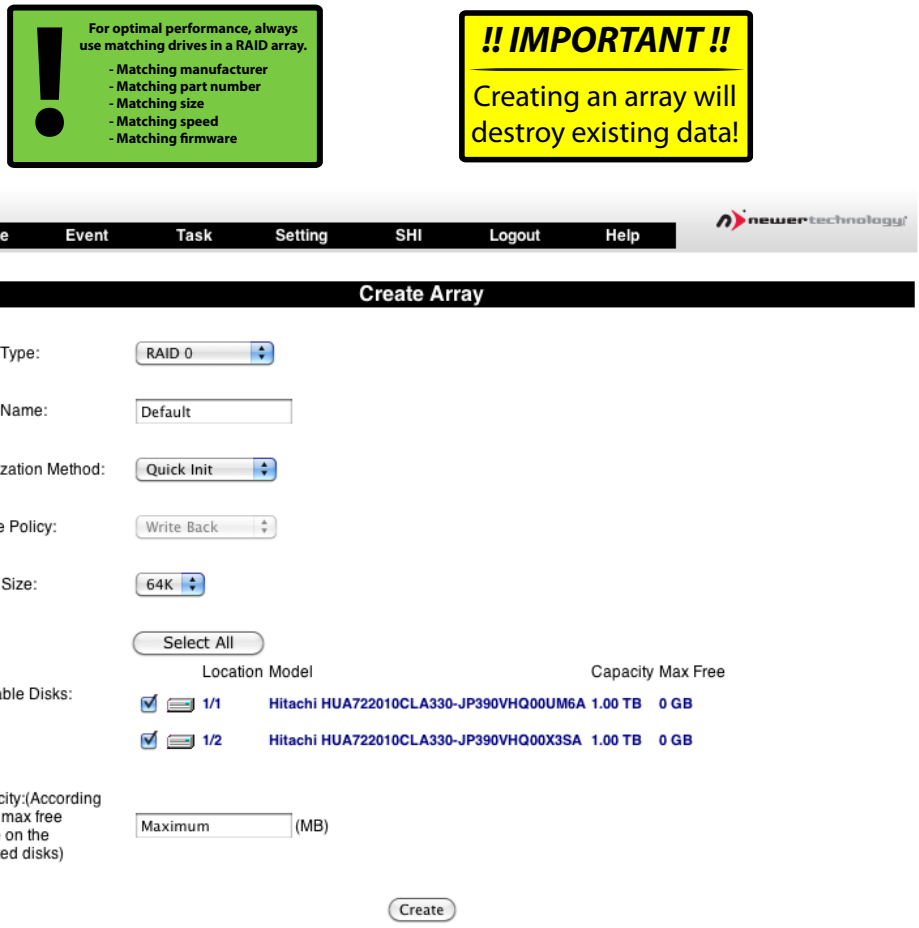
Write Through

Writes to the array are always passed to the drives and subsequent reads may still be completed from the cache if necessary.

5) Block Size

A smaller block size results in faster small file reads and writes.

A larger block size results in faster large file reads and writes.



6) Available Disks

Select the available drives you want to use in your RAID array.

7) Create

Click on "***Create***" to build the array. A pop-up notification will display with the creation confirmation.

After the array has initialized, depending on the initialization method chosen, the array will be passed to the operation system to be formatted as a volume for use.

Array Information Window

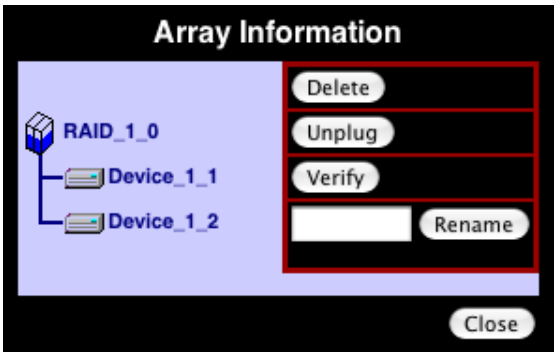
To manage a RAID array after it has been created, you need to access the Array Information window of the array you wish to manage. From within the Array Information window you can unplug, verify, delete, rename, rebuild, and expand/migrate an array.

To access the Array Information window, click on the "***Maintenance***" link for the array you wish to manage.

Unplugging/Disconnecting an Array

To properly disconnect a RAID array from the controller card, you must access the Array Information window and click "***Unplug***".

If an array is physically disconnected without clicking "***Unplug***" an alarm will sound if the audible alarm is enabled in the "***Settings***" section. The alarm can be muted from the Array Management screen.



Verifying an Array

Verification can only be done on RAID arrays that have data redundancy (data protection).

RAID 1 & RAID1/0
The verify process compares the data of one mirror with the other.

RAID 5
The verify process calculates RAID5 parity and compares it to the parity data on the array.

In general, verification also checks each sector on a drive for any errors or problems. Periodic verification of an array allows the drive firmware to take corrective action on any problem areas of a drive to assist in minimizing the occurrence of uncorrectable read and write errors.

For instruction on how to schedule periodic verification, see page 11 on Tasks.

Deleting an Array

To delete an array, click the "***Delete***" button from within the "***Array Information***" window. A pop-up window will ask you to confirm the array deletion. Click "***OK***" to continue with the deletion or "***Cancel***" to cancel the deletion. Deleting an array will delete all the data on that array.

Renaming an Array

To change the name of an array, enter the desired name in the empty field next to the "***Rename***" button and then click the "***Rename***" button.

Expanding/Migrating an Array

By utilizing Online Capacity Expansion (OCE) and Online RAID Level Migration (ORLM) techniques, it is possible to migrate a RAID array from one RAID level to another and also expand the capacity of the array without taking the array offline or deleting the existing data.

!! WARNING !!

Use on Mac OS X will destroy existing data!

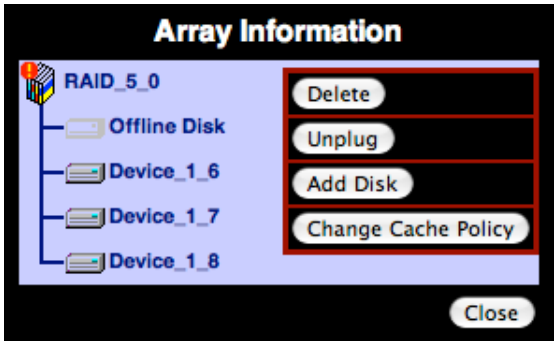
Due to a limitation in Mac OS X which will require the migrated and/or expanded array to be reformatted, it is only recommended to use the OCE/ORLM feature with Windows systems.

Rebuilding an Array & Replacing a Failed Drive

When a redundant array becomes degraded and enters a "Critical" state, usually caused by a failed drive, it will need to be rebuilt.

If a spare drive has already been reserved via the Spare Pool Management section, it will automatically replace a failed drive and begin the rebuild process. If there are no drives in the Spare Pool, follow these steps to replace a failed drive and begin the rebuild process:

1. Physically replace the failed drive with a matching, unformatted drive. It is strongly recommended with RAID arrays to use drives that are matching in manufacturer, part number, size, speed, and firmware.
2. Before adding the drive to the RAID array, it is suggested to initialize the drive via the Device Management section of the RAID Manager. *See page 8 , Device Management for more information on initializing a drive.*
3. After the new drive has been initialized, navigate to the Array Management screen. Click the "***Maintenance***" link on the array needing to be rebuilt to bring up the Array Information window. Click the "***Add Disk***" button as pictured to the right.
4. On the Add Disk to Array screen, select the drive that will be added to the RAID array and click the "***Submit***" button.
5. A pop-up window confirming the action will appear and the rebuild process will begin immediately. Rebuild time will vary depending on drive speed and capacity.



For optimal performance, always use matching drives in a RAID array.

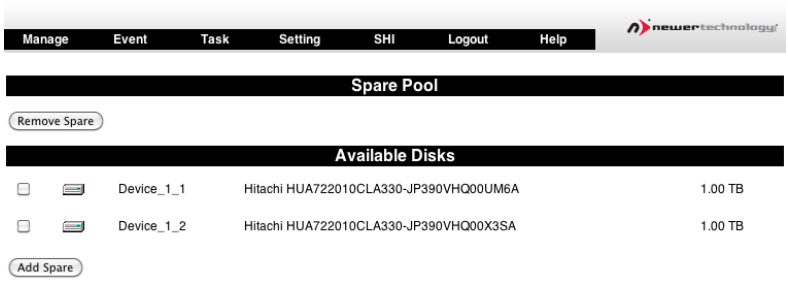
- Matching manufacturer
- Matching part number
- Matching size
- Matching speed
- Matching firmware

Spare Pool Management

The purpose of a spare pool is to have drives in reserve to instantly take the place of any failed drives in a redundant RAID array such as a RAID 1, RAID 5, RAID 10, or RAID 50 array. This allows rebuilds to start instantly in order to minimize the risk of data loss.

To access the Spare Pool Management screen, click on the "***Manage***" menu item and select "***Spare Pool***".

To add a drive to the Spare Pool, select an available drive from the "***Available Disks***" section and click on the "***Add Spare***" button.



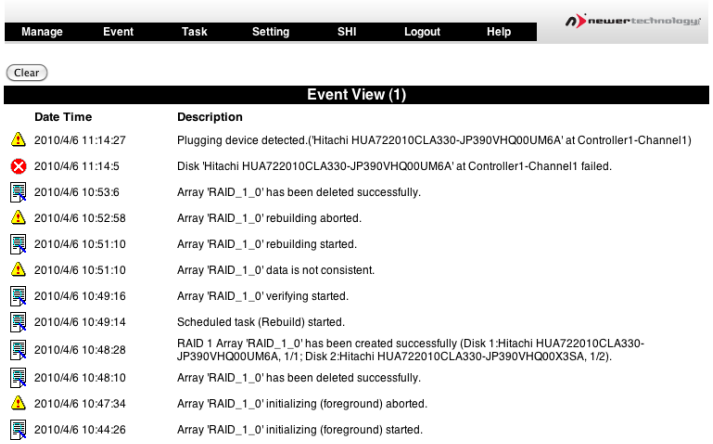
Events

The Newer Technology Web Manager software will automatically log all events that occur on the MAXPower® controller card.

Indicates general information and occurrences.

Warning of minor occurrences and issues. These include plugging of devices into the card and minor issues such as inconsistent data that can be easily fixed by a verify or rebuild.

Warns of major occurrences and problems such as failed drives and improper disconnections of drives and arrays.



Tasks

The Newer Technology Web Manager has a built-in scheduling system to run background rebuilds, verifications, integrity, and health checks to the attached arrays and drives. To enter the task scheduling systems, click on "***Task***" menu item.

Health Inspector Scheduler

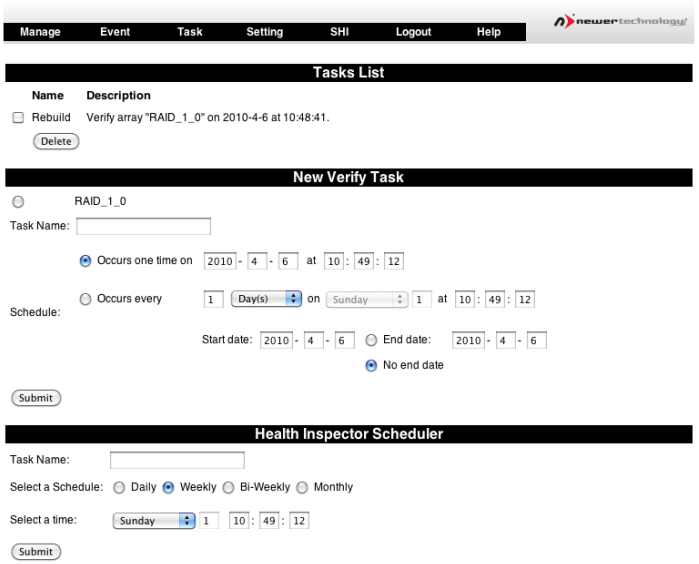
The Health Inspector Scheduler is always visible in the Task screen of the Web Manager to check drive temperatures, bad sector counts, and any other errors that may be reaching critical levels. If any problems are found, a warning event will be created and logged. If you have set SMTP settings for email notification of warnings in the "***Settings***" section of the Web Manager, you will receive an email notification.

New Verify Task Scheduler

The New Task Scheduler is only visible when redundant RAID arrays are present and is used to schedule times to run background verifications and rebuilds of arrays.

Tasks List

Once a Verify or Health Inspector task is created, it will appear in the "***Tasks List***" section. To delete a scheduled task, select the checkbox next to the task and click on the "***Delete***" button.



Settings

General configuration settings for the Newer Technology MAXPower RAID eSATA 6G-4e controller card can be set in the Settings page by clicking on the "***Setting***" menu item.

Auto Rebuild
Enabling Auto Rebuild allows the controller to use any matching unformatted drive for rebuilding a failed array regardless of whether or not it is in the Spare Pool.

Continue Rebuilding on Error
Enabling this allows the controller to keep rebuilding the array as much as possible even if there are read errors occurring on the source drives.

Audible Alarm
Enables and disables the audible alarms for major events. Disabled by default.

Rebuild Priority
Sets the rebuild priority grade with the higher the priority providing the fastest rebuild times, but slowing down any access that occurs during the rebuild.

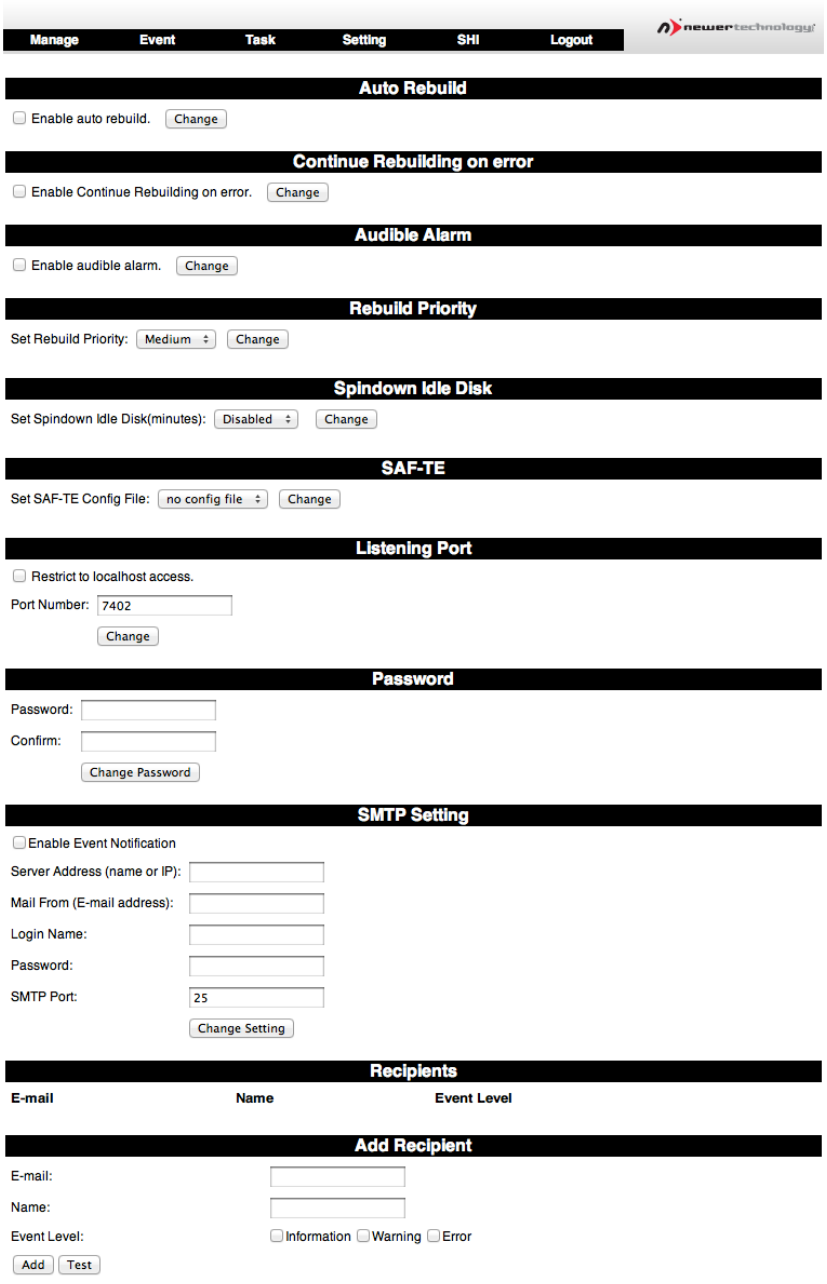
Spindown Idle Disk
Sets the time in minutes for hard disk drives to spin down when not being used.

SAF-TE
Configures SAF-TE settings for SAF-TE activated enclosures.

Listening Port
The controller card's listening port for access to the Web Manager can be changed here. The listening port is specified at the end of the URL (http://localhost:####) used to access the Web Manager. Changing the listening port is beneficial when multiple cards use the same listening port.

Password
The password used for accessing the Web Manager can be changed here. It is strongly recommend to change the password to something other than the default password. The default username and password are "admin" and "admin" respectively.

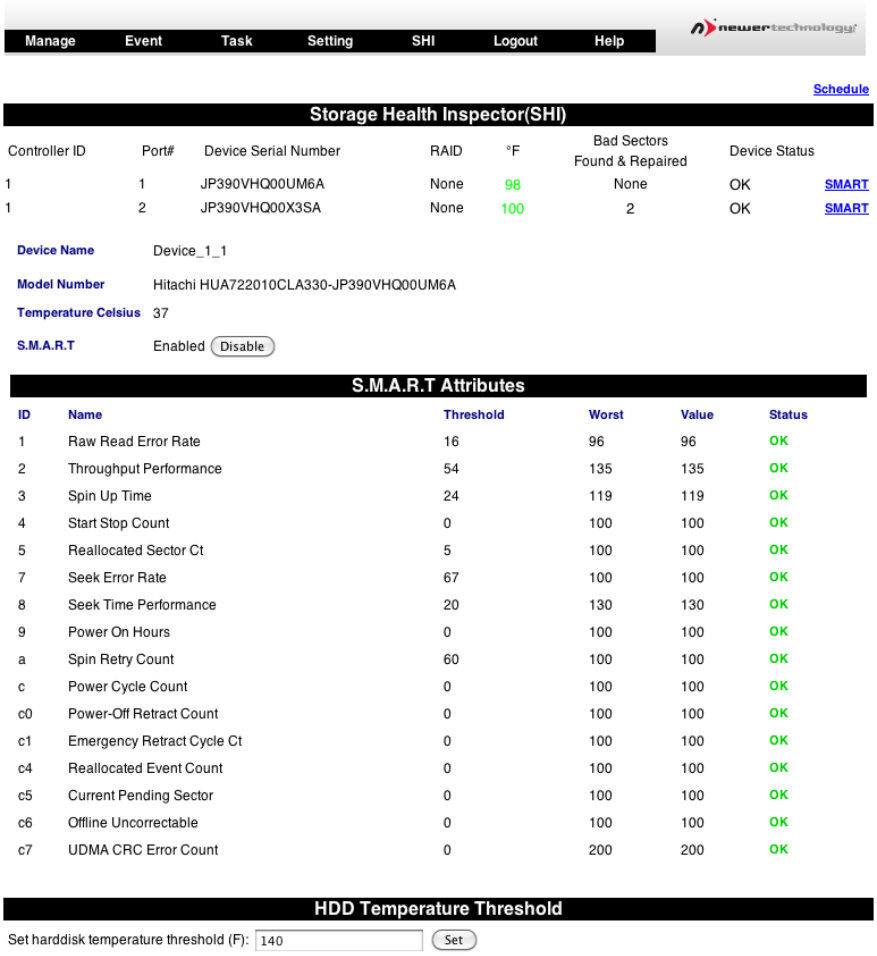
SMTP Setting / Recipients / Add Recipient
Enter SMTP (outgoing) mail server setting here to allow notifications and warnings to be sent to email recipients. You can add multiple recipients and choose level of events that are sent to each email recipient.



SHI (Storage Health Inspector)

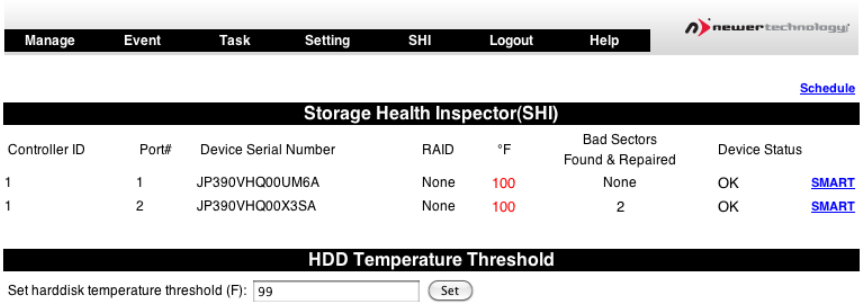
The Newer Technology Web Manager has a built-in health monitoring system to allow for monitoring of drive characteristics and S.M.A.R.T status attributes. To access, click on the "***SHI***" menu item.

Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T.) is a monitoring system built into drives to monitor different health attributes to assist in warning of potential problems before catastrophic failure can occur. To view the S.M.A.R.T status attributes of an attached drive, click on "***SMART***" to expand the attributes for viewing.



Within the SHI section of the Web Manager, you can also set the temperature warning threshold for attached drives. Certain drives have different maximum operating temperatures, so always check your drive's specifications before changing the threshold setting. If a temperature exceeds the threshold, it will turn from green to red.

SHI will also display the number of bad sectors found and repaired. Having a small number is acceptable, but if the number continually grows or the number turns red, it is strongly recommended to replace the drive.



Web Manager Interface Icons

The Newer Technology Web Manager has many icons indicating different drive, array, or system information. Use the following as a reference for what the different icons indicate:

	"Legacy" status indicating drive/device has existing file system/formatting
	"Uninitialized" status indicating the drive/device or array has not been initialized or has stopped initialization
	Information
	Warning
	Error
	"Critical" status indicating a drive/ device is missing from the array
	"Critical" status indicating that the array needs to be rebuilt or when a RAID member is needing to rebuild its data
	"Rebuilding" status indicating data verification failed or when adding a new drive/device into a "Critical" array
	Array status is "Verifying" indicating that the array is running a data integrity check
	Indicates an array or device is "Disabled"
	"Initializing" status indicating the array isinitializing in either foreground or background modes
	Indicates a drive/device is designated as a "Spare" and will be used to automatically replace a failed array member
	Indicates that the array OCE/ORLM operation has stopped

	Drive/device
	Legacy drive/device
	Uninitialized drive/device
	JBOD status is normal
	RAID 0 array status is normal
	RAID 1 array status is normal
	RAID 10 array status is normal
	RAID 5 array status is normal
	The array has stopped initializing and the current status is "Uninitialized"
	The array is initializing
	Indicates the array is "Verifying", also known as running an integrity check
	Indicates the array is inconsistent and needs to rebuild
	Indicates an array member(s) is missing
	Indicates the array is rebuilding

Part 4: Troubleshooting & FAQ

Troubleshooting Tips

If a connected storage device is not recognized after connecting it:
First try unplugging the eSATA cable from the NewerTech MAXPower RAID eSATA 6G-4e Card and then plugging it back in. If the device is still not recognized, keep the storage device turned on and connected via eSATA to the NewerTech MAXPower RAID eSATA 6G-4e Card and restart your machine. Please contact Technical Support for further assistance.

If the NewerTech MAXPower RAID eSATA 6G-4e Card is not being recognized by the computer:
First make sure the card is seated completely in the PCIe slot by reviewing the Hardware Installation steps. If the card is still not recognized, try installing the card into a different PCIe slot. If the card is still not recognized, please contact Technical Support for assistance.

FAQ

Does the MAXPower eSATA 6G card support booting?
The NewerTech MAXPower RAID eSATA 6G-4e Card does support booting on Mac and PC. For Mac booting, you must upload the Mac EFI found on the driver disc or download the latest from the Newer Technology website. See page 7 of this manual for steps to set up boot support. On PC's, BIOS booting to RAID is supported.

Why does the card alarm sound when I disconnect the eSATA cable?
The audible alarm on the card is disabled by default, but if it is enabled you must follow a different procedure for physically disconnecting drives from the card. Even though you ejected the drive from the desktop, you must still "unplug" it from the Web Manager interface. Log into the Web Manager and click on the "Maintenance" link for the array you wish to disconnect and click on the "Unplug" button. Now the drives are ready to be physically unplugged from the RAID card.

I installed another card that uses the same localhost:7402 address and now I can't access either card, what do I do?
Remove one of the cards in order to gain access to the Web Manager. Navigate to the "Settings" section and change the Listening Port number from "7402" to another "74xx" number. You should now be able to access that installed card on the new port and the second card on the default "7402" port. Please see page 14 for more information on the Listening Port setting.

What happens if I connect a drive that is already formatted?
The Newer Technology MAXPower RAID eSATA 6G-4e has an automatic passthrough/legacy feature that will pass any connected drive to the OS without needing to initialize it via the Web Manager. The exception to this auto-passthrough feature is when a drive or drives have been initialized via the Web Manager, for use in a RAID array or as a hot spare. The drives will appear in the Web Manager with an "L" over the icon to represent its state as a passthrough/legacy drive.

What do I do if a drive fails?
Please see "Rebuilding an Array & Replacing a Failed Drive" on page 12 for instructions on replacing a failed drive.

Part 5: Contact Information

Telephone

(815) 308-7001
8AM - 10PM CT Monday - Friday
9AM - 4PM CT Saturday

Live Chat

Available 24 hours a day, 7 days a week through NewerTech's® distributor, OWC.
For more information, visit:
http://www.newertech.com/support

Email

Submit your email at:
http://www.newertech.com/support

Part 6: Warranty Information

Newer Technology MaxPower RAID eSATA 6G-4e Controller Card 3 Year Warranty

- Limited Warranty: 3 years parts and labor

Exclusions & Limitations

This Limited Warranty applies only to the Newer Technology MaxPower RAID eSATA 6G-4e Controller Card. The Limited Warranty does not apply to any other Newer Technology, Inc. (NewerTech) or Other World Computing, Inc. (OWC) hardware products or any software, even if packaged or sold with other hardware. Manufacturers, suppliers, or publishers, other than NewerTech and OWC, may provide their own warranties to the end user purchaser, but NewerTech, in so far as permitted by law, provides their products "as is". Software included with the NewerTech MaxPower RAID eSATA 6G-4e Controller Card is not covered under this Limited Warranty. Refer to the licensing agreement accompanying the software for details of your rights with respect to its use.
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This warranty does not apply: (a) to damage caused by use with non-NewerTech products; (b) to damage caused by accident, abuse, misuse, flood, fire, earthquake or other external causes; (c) to damage caused by operating the product outside the permitted or intended uses described by NewerTech or OWC; (d) to damage caused by service (including upgrades and expansions) performed by anyone who is not a representative of NewerTech, OWC or an Authorized Service Provider of NewerTech or OWC; (e) to a product or part that has been modified to significantly alter functionality or capability without the written permission of NewerTech and OWC; (f) to consumable parts, such as batteries, unless damage has occurred due to a defect in materials or workmanship; or (g) if any NewerTech serial number has been removed or defaced.

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Obtaining Warranty Service

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Part 7: Software License Agreement (SLA)

Newer Technology Web-Based RAID Manager Application SLA

Your Acceptance of Terms

The following Software License Agreement ("SLA") is between you and Newer Technology, Inc. (collectively "NewerTech"), and constitutes as the legal agreement that governs your use of the NewerTech Web-Based RAID Manager software application (collectively referred to as the "Product"). You must agree to this SLA before you can use the Product. You can agree to this SLA by: a) actually using the Product, or b) agreeing to this Software License Agreement. If you do not agree to any of the following terms, please do not use the Product. You should print or otherwise save a copy of this SLA for your records.

Legal Authority

To use the Product you must be: a) of legal age to form a binding contract with NewerTech, and b) cannot be a person barred from receiving the Product under the laws of the United States or other applicable jurisdiction, including the country in which you reside or from where you use the Service. By accepting this SLA you represent that you understand and agree to the foregoing.

Description of the Product

The "Product" as listed above consists of RAID administrator computer software, which may include associated media, printed materials, and "online"/"web" electronics documentation.

Changing the Product

NewerTech reserves the right to modify, suspend or stop the Product (or any part thereof), either temporarily or permanently, at any time or from time to time, with or without prior notice to you. Without limiting the foregoing, NewerTech may provide notice of any such changes to the Product by posting them on its websites and/or via the Product. You agree that NewerTech shall not be liable to you or any third party for any modification or cessation of the Product. You acknowledge that NewerTech has no express or implied obligation to provide, or continue to provide, the Product, or any part thereof, now or in the future; and in addition, NewerTech may at any time, upon prior notice as required by applicable law, institute charges or fees for the Service.

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Any litigation or other dispute resolution between you and NewerTech arising out of or relating to this SLA or your use of the Product will take place in the McHenry County. Illinois, and you and NewerTech hereby consent to the personal jurisdiction of and exclusive venue in the state and federal courts within that District with respect to any such litigation or dispute resolution. This Agreement will be governed by and construed in accordance with the laws of the United States and the State of Illinois, except that body of Illinois law concerning conflicts of law. This Agreement shall not be governed by the United Nations Convention on Contracts for the International Sale of Goods, the application of which is expressly excluded.

Part 8: FCC Certification Information

FCC Part 15 Class B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

European Union Compliance Statement This Information Technologies Equipment has been tested and found to comply with the following European directives:

- European Standard EN55022 (1998) Class B
- European Standard EN55024 (1998)

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